

## CLAIMS

- 1        1. A magnetic random access memory circuit, comprising:
  - 2              a sensor for producing a sensor signal representing a sensed external condition
  - 3              that affects performance of the magnetic memory; and
  - 4              a compensation circuit for compensating for the sensed external condition.
  
- 1        2. The circuit of claim 1 wherein the compensation circuit is configured to  
2        adjust the write current for word and bit lines of the magnetic memory by an amount  
3        required to substantially compensate for the sensed external condition.
  
- 1        3. The circuit of claim 1 wherein the compensation circuit is configured to  
2        reduce the write current for the word and bit lines by an amount required to  
3        substantially compensate for a sensed external magnetic field.
  
- 1        4. The circuit of claim 1 wherein the compensation circuit comprises a  
2        magnetic field generator that generates a compensating magnetic field to substantially  
3        compensate for the sensed external condition.
  
- 1        5. The circuit of claim 4 wherein the magnetic field generator comprises a  
2        solenoid for generating the compensating magnetic field.
  
- 1        6. The circuit of claim 1 wherein the sensor comprises a magnetometer for  
2        sensing an external magnetic field.

1           7. The circuit of claim 6 wherein the magnetometer is integrated with the  
2 magnetic random access memory circuit in a single package.

1           8. The circuit of claim 6 wherein the magnetometer is integrated with the  
2 magnetic random access memory circuit in a single integrated circuit.

1           9. The circuit of claim 1 wherein the sensor comprises a thermocouple for  
2 sensing a temperature of an operating environment of the magnetic random access  
3 memory circuit.

1           10. The circuit of claim 9 wherein the compensation circuit comprises a  
2 temperature controller for altering the temperature of the operating environment.

1           11. The circuit of claim 1 wherein the compensation circuit comprises a  
2 remote memory for storing compensation information.

1           12. A method of compensating for changes in an operating environment of a  
2 magnetic memory array comprising the steps of:  
3           sensing a change in the operating environment of the magnetic memory array;  
4 and  
5 compensating for the sensed change in the operating environment.

1           13. The method of claim 12 wherein sensing a change in the operating  
2 environment comprises sensing a change in a local magnetic field.

1           14. The method of claim 13 wherein compensating for the sensed change  
2 comprises adjusting a write current for word and bit lines of the magnetic memory  
3 array by an amount required to compensate for the sensed change.

1           15. The method of claim 14 wherein compensating for the sensed change  
2 comprises reducing the write current for the word and bit lines by an amount required  
3 to compensate for the sensed change.

1           16. The method of claim 12 wherein the sensed change is a change in a local  
2 magnetic field and the method comprises generating a compensating magnetic field to  
3 compensate for the sensed change.

1           17. The method of claim 16 comprising generating the compensating field  
2 with a solenoid.

1           18. The method of claim 12 wherein the sensed change is a change in a local  
2       temperature.

1           19. The method of claim 18 wherein compensating for the sensed change  
2       comprises maintaining the local temperature at a substantially constant temperature.

1        20. An information handling system comprising:  
2            a first magnetic memory array;  
3            a first sensor positioned near said first magnetic memory array for sensing a  
4        local operating condition of said first magnetic memory array; and  
5            a first compensation circuit for substantially compensating for said sensed  
6        local operating condition.

1        21. The information handling system of claim 20 further comprising:  
2            a second magnetic memory array;  
3            a second sensor positioned near said second magnetic memory array for  
4        sensing a local operating condition of said second magnetic memory array; and  
5            a second compensation circuit for substantially compensating for said sensed  
6        local operating condition.

1        22. The information system of claim 21 further comprising a network  
2        connection for transferring information between said first magnetic memory array and  
3        said second magnetic memory array.

1        23. The information system of claim 22 comprising a remote memory that is  
2        not affected by local conditions for storing compensation information used by said  
3        compensation circuits.